MICHIGAN DEPARTMENT OF TRANSPORTATION
AIRPORTS DIVISION - STANDARD SPECIFICATION
T-908
Mulching

DESCRIPTION

1.1 This item shall consist of furnishing, hauling, placing, and securing mulch on surfaces indicated on the plans or designated by the Engineer.

MATERIALS

2.1 **Mulch Material.** Acceptable mulch shall be the materials listed below or any approved locally available material that is similar to those specified. Low grade, musty, spoiled, partially rotted hay, straw, or other materials unfit for animal consumption will be acceptable. Mulch materials, that contain matured seed of species which would volunteer and be detrimental to the proposed over seeding, or to surrounding farm land, will not be acceptable. Straw or other mulch material which is fresh and/or excessively brittle, or which is in such an advanced stage of decomposition as to smother or retard the planted grass, will not be acceptable.

(a) **Hay.** Hay shall be native hay, sudan grass hay, broomsedge hay, legume hay, or similar hay or grass clippings.

(b) **Straw.** Straw shall be the threshed plant residue of oats, wheat, barley, rye, or rice from which grain has been removed.

(c) **Hay Mulch Containing Seed.** Hay mulch shall be mature hay containing viable seed of native grasses or other desirable species stated in the special provisions or as approved by the Engineer. The hay shall be cut and handled so as to preserve the maximum quantity of viable seed. Hay mulch that cannot be hauled and spread immediately after cutting shall be placed in weather-resistant stacks or baled and stored in a dry location until used.

(d) **Manufactured Mulch.** Cellulose-fiber or wood-pulp mulch shall be products commercially available for use in spray applications.

(e) **Asphalt Binder.** Asphalt binder material shall conform to the requirements of ASTM D977, Type SS-1 or RS-1.

2.2 **Inspection.** Within 5 days after acceptance of the bid, the Engineer shall be notified of sources and quantities of mulch materials available and the Contractor shall furnish him with representative samples of the materials to be used. These samples may be used as standards with the approval of the Engineer and any materials brought on the site which do not meet these standards shall be rejected.

CONSTRUCTION METHODS

3.1 **Mulching.** Before spreading mulch, all large clods, stumps, stones, brush, roots, and other foreign material shall be removed from the area to be mulched. Mulch shall be applied immediately after seeding. The spreading of the mulch may be by hand methods, blower, or other mechanical methods, provided a uniform covering is obtained.

Mulch materials shall be furnished, hauled, and evenly applied on the area shown on the plans or designated by the Engineer. Straw or hay shall be spread over the surface to a uniform thickness at the rate of 2 to 3 tons per acre to provide a loose depth of not less than 1-1/2 inches nor more than 3 inches. Other organic material shall be spread at a rate directed by the Engineer. Mulch may be blown on the slopes and the use of cutters in the equipment for this purpose will be permitted to the extent that at least 95% of the mulch in place on the slope shall be 6 inches or more in length. When mulches applied by the blowing method are cut, the loose depth in place shall be not less than 1 inch nor more than 2 inches.

3.2 **Securing Mulch.** The mulch shall be held in place by light discing, a very thin covering of topsoil, small brush, pins, stakes, wire mesh, asphalt binder, or other adhesive material approved by the Engineer. Where mulches have been secured by either of the asphalt binder methods, it will not be permissible to walk on the slopes after the binder has been applied. The Contractor is warned that in the application of asphalt binder material, he or she must take every precaution to guard against damaging or disfiguring structures or property on or adjacent to the areas worked and that he or she will be held responsible for any such damage resulting from his/her operations.
If the “Peg and String” methods is used, the mulch

shall be secured by the use of stakes or wire pins driven into the ground on 5 foot centers or less. Binder twine shall be strung between adjacent stakes in straight lines and criss-crossed diagonally over the mulch, after which the stakes shall be firmly driven nearly flush to the ground to draw the twine down tight onto the mulch.

3.3 Care and Repair.

(a) The Contractor shall care for the mulched areas until final acceptance of the project. Such care shall consist of providing protection against traffic or other use by placing warning signs, as approved by the Engineer, and erecting any barricades that may be shown on the plans before or immediately after mulching has been completed on the designated areas.

(b) The Contractor shall be required to repair or replace any mulching that is defective or becomes damaged until the project is finally accepted. When, in the judgment of the Engineer, such defects or damages are the result of poor workmanship or failure to meet the requirements of the specifications, the cost of the necessary repairs or replacement shall be borne by the Contractor. However, once the Contractor has completed the mulching of any area in accordance with the provisions of the specifications and to the satisfaction of the Engineer, no additional work at his/her expense will be required, but subsequent repairs and replacements deemed necessary by the Engineer shall be made by the Contractor and will be paid for as additional extra work.

(c) If the "Asphalt Spray" method is used, all mulched surfaces shall be sprayed with asphalt binder material so that the surface has a uniform appearance. The binder shall be uniformly applied to the mulch at the rate of approximately 8.0 gallons per 1,000 square feet, or as directed by the Engineer, with a minimum of 6.0 gallons and a maximum of 10 gallons per 1,00 square feet depending on the type of mulch and the effectiveness of the binder securing it. Bituminous binder material may be sprayed on the mulched slopes areas from either the top or the bottom of the slope. An approved spray nozzle shall be used. The nozzle shall be operated at a distance of not less than 4 feet from the surface of the mulch and uniform distribution of the bituminous material shall be required. A pump or an air compressor of adequate capacity shall be used to insure uniform distribution of the bituminous material.

(d) If the "Asphalt Mix" method is used, the mulch shall be applied by blowing, and the asphalt binder material shall be sprayed into the mulch as it leaves the blower. The binder shall be uniformly applied to the mulch at the rate of approximately 8.0 gallons per 1,000 square feet or as directed by the Engineer, with a minimum of 6.0 gallons and a maximum of 10 gallons per 1,000 square feet depending on the type of mulch and the effectiveness of the binder securing it.

METHOD OF MEASUREMENT

4.1 Mulching shall be measured in acres and tenths or per square yard on the basis of the actual surface area mulched and accepted.

Manufactured netting mulch shall be measured in square yards on the basis of the actual surface area mulched and accepted.

BASIS OF PAYMENT

5.1 Payment will be made at the contract unit price per acre or per square yard as specified for the type of mulching. This price shall be full compensation for furnishing all materials and for placing and anchoring the materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under the nomenclature and seven digit item number specified in the plans and proposal for each type of mulching required per acre or per square yard, as applicable.

The first three digits of any item number for work included under this specification shall be 908, i.e. 908XXXX.

TESTING AND MATERIAL

Material and Short Title

ASTM D977 - Emulsified Asphalt